UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/839,565	04/20/2001	William McFarland	P 0269521 ATH-025(u)	1458

30547 7590 03/13/2007

BEVER HOFFMAN & HARMS, LLP
2099 GATEWAY PLACE
SUITE 320
SAN JOSE, CA 95110

EXAMINER	
ODOM, CURTIS B	
ART UNIT	PAPER NUMBER
2611	

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/13/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary	Application No.	Applicant(s)	
	09/839,565	MCFARLAND, WILLIAM	
	Examiner	Art Unit	
	Curtis B. Odom	2611	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 February 2007*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *2-5,8,9,12,13,15-18,20,21,24 and 25* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *4,5,8,9,12,13,17,18,20,21,24 and 25* is/are allowed.

6)☐ Claim(s) *2, 3, 15, and 16* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Response to Amendment

1. The finality of the rejection of the last Office action is withdrawn due to new grounds of rejection.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 2 and 15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art in view of van Nee (previously cited in Office Action 6/14/2005).

Regarding claim 2, the Applicant states (see page 1, line 19, of the instant specification) "The following discussion of the prior art and the invention will address OFDM systems". In the following discussion of the prior art, the Applicant discloses a method of communicating between a transmitter (see Fig. 1) and a receiver in a wireless multi-carrier system comprising the steps of:

setting in the transmitter an initial number of N carriers (see instant specification, page 1, lines 23-28) and an initial symbol rate at which symbols are transmitted by clocking the iFFT (see instant specification, page 2, lines 3-9) from the transmitter to the receiver;

transmitting a first group of symbols using the initial number of carriers and the initial symbol rate shown as a transmitted frequency spectrum in Fig. 3 (see instant specification, page 2, lines 3-9);

wherein changing the rate at which symbols are transmitted includes of changing a frequency output by a clock (see Fig.1, page 2, lines 3-9 of the instant specification) which represents frequency synthesizer that is used to clock a serial to parallel converter, a divide by N counter coupled to an iFFT, and a parallel to serial converter as shown in Fig. 1.

The applicant does not specifically disclose as prior art changing in the transmitter the rate at which symbols are transmitted from the transmitter to the receiver from the initial symbol rate to a subsequent symbol rate that is different than the initial symbol rate; and transmitting a second group of symbols using the initial number of carriers and the subsequent symbol rate.

However, van Nee discloses changing (column 4, line 1-column 5, line 5 and column 5, line 58-column 6, line 40) in the transmitter the rate at which symbols are transmitted from the transmitter to the receiver from the initial symbol rate to a subsequent symbol rate by controlling a clock (frequency synthesizer) used to clock an iFFT (see column 4, line 58-column 5, line 5) that is different than the initial symbol rate (column 7, line 62-column 8, line 19, wherein the symbol (data) rate is increased or decreased based on feedback from the receiver; and transmitting (Fig. 1, block 24) a second group of symbols using the initial number of carriers and the subsequent symbol rate.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the prior art with the teachings of van Nee to use the clock to change the symbol rate since van Nee discloses increased flexibility and adaptability is provided to a system which allows the scaling of operating parameters (see column 1, lines 38-41).

2005).

Regarding claim 15, discloses a method of communicating between a transmitter (see Fig. 1) and a receiver in a wireless multi-carrier system comprising the steps of:

setting in the transmitter an initial number of N carriers (see instant specification, page 1, lines 23-28) and an initial symbol rate at which symbols are transmitted by clocking the iFFT (see instant specification, page 2, lines 3-9) from the transmitter to the receiver;

transmitting a first group of symbols using the initial number of carriers and the initial symbol rate shown as a transmitted frequency spectrum in Fig. 3 (see instant specification, page 2, lines 3-9);

wherein changing the rate at which symbols are transmitted includes of changing a frequency output by a clock (see Fig.1, page 2, lines 3-9 of the instant specification) which represents frequency synthesizer that is used to clock a serial to parallel converter, a divide by N counter coupled to an iFFT, and a parallel to serial converter as shown in Fig. 1.

The applicant does not specifically disclose as prior art changing in the transmitter the rate at which symbols are transmitted from the transmitter to the receiver from the initial symbol rate to a subsequent symbol rate that is different than the initial symbol rate; changing in the transmitter the number of carriers in active use from the initial number of carriers to a subsequent

number of carriers that is different than the initial number of carriers and transmitting a second group of symbols using the initial number of carriers and the subsequent symbol rate.

However, van Nee discloses changing (column 4, line 1-column 5, line 5 and column 5, line 58-column 6, line 40) in the transmitter the rate at which symbols are transmitted from the transmitter to the receiver from the initial symbol rate to a subsequent symbol rate by controlling a clock (frequency synthesizer) used to clock an iFFT (see column 4, line 58-column 5, line 5) that is different than the initial symbol rate (column 7, line 62-column 8, line 19, wherein the symbol (data) rate is increased or decreased based on feedback from the receiver; changing (column 4, line 1-column 5, line 5 and column 5, line 58-column 6, line 40) in the transmitter the number or carriers in active use from the initial number of carriers to a subsequent number of carriers that is different than the initial number of carriers (column 7, line 62-column 8, line 19 and column 9, line 42-column 10, line 33), wherein the number of carriers are changed based upon feedback from the mobile station; and transmitting (Fig. 1, block 24, column 10, lines 17-33) a second group of symbols using the subsequent number of carriers and the subsequent symbol rate.

Therefore, it would have been obvious to one skilled in the art at the time the invention was made to modify the prior art with the teachings of van Nee to use the clock to change the symbol rate since van Nee discloses increased flexibility and adaptability is provided to a system which allows the scaling of operating parameters (see column 1, lines 38-41).

2005).

3. Claims 3 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Applicant's Admitted Prior Art in view of van Nee (previously cited in Office Action 6/14/2005) as applied to claims 2 and 15, and in further view of Suzuki (U. S. Patent No. 6, 044, 067).

Regarding claims 3 and 16, the prior art and van Nee do not disclose changing the frequency output of the clock (frequency synthesizer) uses a phase locked loop.

However, Suzuki discloses a frequency synthesizer formed of a phase locked loop for generating multiple signals in a frequency band (see column 6, lines 5-12). Therefore, it would have been obvious to one skilled in the art at the time the invention was made to provide a frequency synthesizer in the prior art and van Nee as disclosed by Suzuki since Suzuki states using multiple signals in a frequency band (BDMA) has excellent transmission characteristics.

Allowable Subject Matter

4. Claims 4, 5, 17, and 18 are allowable over prior art references because related references do not disclose changing the symbol rate and number of carriers by controlling a frequency synthesizer used to clock a divide by N counter, IFFT, and parallel to serial converter, and controlling a multiplexer output to select between circuits capable of selecting different symbol rates. Claims 8, 9, 12, 13, 20, 21, 24 and 25 are allowable over prior art references because related references do not disclose controlling a number of carriers and symbol rate by placing zero magnitude signals on the carriers.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Curtis B. Odom whose telephone number is 571-272-3046. The examiner can normally be reached on Monday- Friday, 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jay Patel can be reached on 571-272-2988. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Curtis Odom
March 7, 2007

JAY K. PATEL
SUPERVISORY PATENT EXAMINER